

Peaceful Nuclear Cooperation

U.S. Support for NPT Article IV

UNITED STATES & EGYPT

Through the International Atomic Energy Agency (IAEA), the United States contributes to the work of many countries using nuclear materials and technology for peaceful purposes. In recent years, U.S. support has focused on achieving tangible and lasting benefits in fields that are vital to human development, including agriculture, human health, water resource management, and human resource development. Since 2000, the IAEA has approved and funded \$8,578,890, including \$274,709 in 2013, under its Technical Cooperation (TC) program for projects in Egypt.

The United States views its support for the peaceful uses of nuclear energy as a critical part of its efforts to strengthen the IAEA and the global nuclear nonproliferation regime. About 25% of the IAEA's annual budget for peaceful nuclear assistance comes from the U.S. In 2012, the U.S. contributed almost \$22 million to the Technical Cooperation Fund and over \$6 million in additional funding for training, fellowships, and cost-free experts.

In addition to these longstanding contributions to the IAEA's peaceful uses programs, at the 2010 NPT Review Conference, the United States

announced a \$100 million Initiative to further expand this support over the next five years. The U.S. pledged \$50 million towards the IAEA's Peaceful Uses Initiative (PUI), focusing on human health, food security, water resource management, and nuclear power infrastructure development. The U.S. has already allocated over \$27 million to specific PUI projects, and welcomes the contributions of Japan, the Republic of Korea, New Zealand, the Czech Republic, Hungary, Sweden, Australia, France, Indonesia, Brazil, Italy, the UK and Kazakhstan to this important Initiative.

NUCLEAR ENERGY

The need for electricity, economic competitiveness and environmental considerations have increasingly led a large number of Member States to consider nuclear power as an energy development option and seek assistance from the IAEA.

Egypt is currently participating in a regional TC project sponsored by the United States to increase awareness of the requirements and challenges related to the feasibility of nuclear power programs. The project addresses regional priorities and concerns related to nuclear energy, including the requirements for conducting comprehensive studies to explore the feasibility of nuclear power, developing nuclear safety frameworks, and promoting regional cooperation and common understanding about major nuclear power issues, such as nuclear material, radioactive waste management, legal and safety obligations, human and financial resources, and reliable technologies.

Surging interest in nuclear energy has also created new challenges for those African countries with uranium resources and other radioactive ores as

many lack appropriate legislative frameworks for regulating activities related to uranium exploration and exploitation in order to protect their interests, the environment and the public at large. Egypt is currently participating in a regional TC project sponsored by the United States to strengthen participating Member States' capabilities for effective and efficient management of uranium resources and other radioactive ores, as well as to build the legislative framework to effectively regulate related activities.

NUCLEAR SAFETY

The use of nuclear technology has great potential to help shape the future of developing countries, but is not without some risk. In recognition of this, Egypt recently participated in a regional TC project funded by the United States to strengthen national regulatory infrastructures for the control of radiation sources. Egypt currently participates in another regional TC project, also funded by the United States to maintain these regulatory infrastructures and enhance their effectiveness and sustainability.

Self-assessment and regional networking can also significantly contribute to strengthening national regulatory infrastructures, so Egypt is currently participating in a regional TC project sponsored by the United States to improve the performance of regulatory systems and conform to the requirements of international standards through self-assessment and enhanced regional cooperation.

Egypt is also extending its cooperation by participating in an interregional TC project sponsored by the United States to strengthen cradle-to-grave control of radioactive sources in the Mediterranean region.



*International radiation measurement exercise.
Credit: Dean Calma/IAEA*

RADIATION PROTECTION

Through additional U.S.-sponsored regional TC projects, Egypt is also currently working to strengthen occupational radiation protection, radiation protection of patients during medical exposure, as well as control of public exposures.

Furthermore, disused facilities and sites contaminated because of activities involving the use of radioactive material pose continuing health risks to adjacent communities and, potentially, to the wider public. Egypt is currently participating in an interregional TC project sponsored by the United States that will provide assistance toward the efficient clean-up of radioactive contaminated facilities and sites.

EMERGENCY MANAGEMENT

Radiation emergencies not only risk injury to individuals, but can also contaminate large territories and affect the living conditions of communities. Egypt is currently participating in a regional TC project sponsored by the United States to strengthen participating countries' national arrangements for response to radiological and nuclear emergencies and improve their compliance with international standards.

HUMAN HEALTH

While radiotherapy is a well-known nuclear technology used for cancer

treatment, the lack of adequate human resources in many centers in the African region negatively affects the accessibility and quality of care available for cancer patients. Egypt is currently participating in a regional TC project sponsored by the United States to determine the number of professionals working in each country, assess and improve existing training programs, and establish training programs in countries where they don't exist.

INDUSTRIAL APPLICATIONS

In Egypt, many companies are producing agrochemicals but the use of their controlled release is not yet widespread, although it is advantageous both economically and environmentally. Most of these products use polymeric materials, which have the ability to regulate agrochemical dissolution in the soil. Through a national TC project sponsored by the United States, Egypt is working to enhance the use of environmentally friendly radiation processing of new materials, such as the preparation of curable polymeric materials for controlled release of agrochemicals.

AGRICULTURE

Egypt is also participating in a project, coordinated by the IAEA's Department of Nuclear Sciences and Applications and supported by the United States, to

implement capacity building activities to improve food safety and quality through nuclear technology and the establishment of networks of laboratories and affiliated, donor, and technical agencies. The project involves workshops, human resource training, and technology transfers, and aims to establish functional networks, raise awareness of food safety and conduct food safety gap analysis in selected countries.

HUMAN RESOURCES

To contribute to the manpower development of Member States' nuclear programs, the IAEA awards individual fellowships and organizes group training courses. Since 2000, the United States has hosted multiple training courses that included Egyptian participants in fields such as decommissioning, isotope hydrology, irradiation for food safety, quality assurance in radiotherapy, nuclear security, nuclear safety, and long-range nuclear energy strategies. Training was also provided through the IAEA Fellowship Program to 34 Egyptians, 14 of which were sponsored by the United States, in fields including accelerators, nuclear physics, radioactive waste management, insect pest control, food irradiation, nuclear medicine imaging, and radiation protection.

Through bilateral efforts, the United States has provided direct support to Member States through various collaborative projects such as the exchange of information, expert visits, and training of personnel.

In January 2008, a delegation from the Egyptian Atomic Energy Authority (EAEA), headed by Director Aly Islam Aly, participated in a workshop sponsored by the U.S. Department of Energy's National Nuclear Security Administration (DOE/NNSA) held at

Lawrence Livermore National Laboratory, on nuclear safety and nonproliferation infrastructure challenges.

Also, the International Nuclear Safeguards Engagement Program (INSEP) has assisted Egypt with Nuclear Safeguards and quality assurance and quality control.

In 2009, DOE/NNSA provided \$64,000 to activities in Egypt related to research reactor operations and utilization, low-level radioactive waste management, environmental radiological

surveillance, and human resource development for nuclear infrastructures.

In 2010, an agreement was made that covered human resource development for nuclear infrastructure. In 2010, DOE/NNSA provided \$147,000 in funding to Egypt and in 2012, \$87,000.

Additionally, since 2000, 14 Egyptian physicians have been certified in the U.S. through the American Board of Nuclear Medicine.

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